
**Proposed Northern Pass Transmission Project
Economic Impact Update
Estimated New Hampshire Jobs
During 3 Year Construction Phase**

**Prepared for
Northern Pass Transmission LLC**

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Project Background on Economic Impacts

The Northern Pass transmission project is a proposal for a 180 mile transmission line to bring 1,200 MW of competitively priced, low carbon, renewable energy from Canada into New Hampshire and the Northeast region of the United States.

Northern Pass has received approval from the Federal Energy Regulatory Commission (FERC) for a proposed funding arrangement whereby Northern Pass will develop, construct, own and maintain a 1200 MW HVDC transmission line and Hydro-Quebec will pay for the firm transmission service over a 40 year term to deliver low-carbon, predominantly hydro-electric power to New Hampshire and New England. In the FERC docket, a study prepared on behalf of Northern Pass by the Charles River Associates (CRA) estimated the impact of the proposed project on regional wholesale energy markets. By bringing in lower cost, stable power into the regional grid, the CRA study estimated that higher cost power will be displaced. This will lower wholesale energy costs for all of New England by about \$200 million in the first year of operation and save over \$300 million per year by 2025. New Hampshire's share of the wholesale savings starts at \$23 million per year in 2015, rising to \$37 million in 2024.

The downward pressure on wholesale energy rates will have the effect of creating jobs in New Hampshire. It is estimated that on average 200 more jobs per year will be created in New Hampshire over the 10 year period. These average 200 jobs per year will be created after the project becomes operational and are therefore in addition to the significant jobs created during the development and construction of the project, as discussed in detail in the next section. These estimates are based on the Charles River Associates forecast of wholesale energy cost savings in New Hampshire, as inputs into a widely used New Hampshire economic model called the Regional Economic Models, Inc. (REMI) model. The REMI model is a sophisticated dynamic forecasting and policy analysis tool, known as an econometric model, that is widely used in the public and private sectors throughout the country. The model simulates the dynamic, interactive effects over time and across industries that result from a change in the economy, such as a large investment in an energy infrastructure project. The REMI model used in this study was a twenty-three sector, three-region New Hampshire model.

In recognition of the host role New Hampshire communities will play for this project, negotiations are on-going for a specific power purchase agreement to lock-in a slice of low-cost retail power for New Hampshire customers. Economic and energy market analysis of a New Hampshire power purchase agreement will be conducted at a later time. A power purchase agreement has not yet been reached, and would require state regulatory approval.

The property taxes paid by this \$1.1 billion utility investment have been previously estimated in the range of \$25 million per year, spread across localities, counties, and the state. These property tax payments would be on-going.



Community and landowner input concerning siting, design, and mitigation is expected during the coming year to minimize potential negative effects and maximize potential positive effects on existing property values.

Regulatory permitting for the Northern Pass project is still in the preliminary phases at both the federal and state level. A filing at the Department of Energy has been made, scoping hearings were held by the Department in March, 2011, and the comment period is still open. A filing for the state approval process with the New Hampshire Site Evaluation Committee is not expected until 2012. The project cannot begin construction until all applicable federal and state approvals are received.

Jobs Estimates During Development and Construction Phases

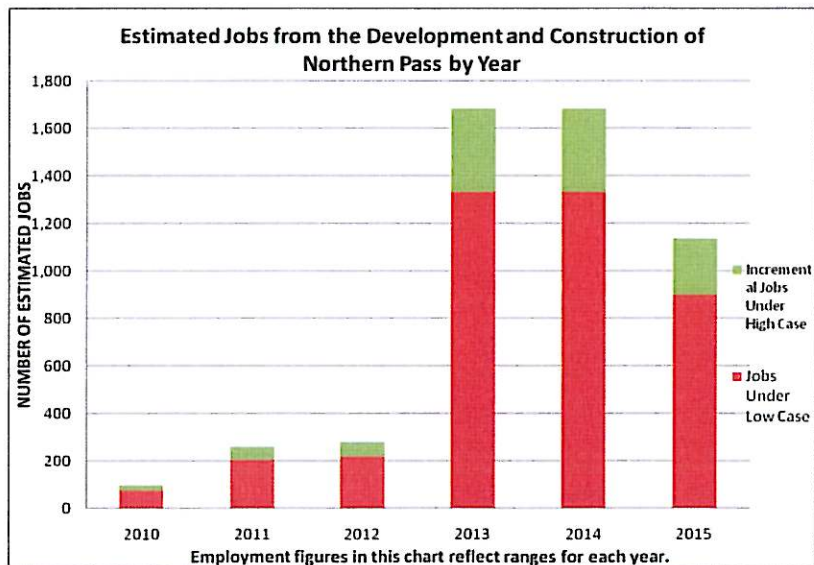
Preliminary total cost estimates for the development and construction of the project is \$1.1 billion. These cost estimates are based on a preliminary proposal, the details of which will continue to evolve as community and landowner input is received and the design finalized. Except for the Concord area, where the project is still working with the FAA to navigate airport safety requirements, all alternative routes from Groveton to Deerfield that would potentially go through completely new rights-of-way have been dropped. The project proposes about 40 miles of new rights-of-way from Groveton to the Canadian border, and is actively working with local citizens and communities to identify an alternative route that is more locally supported. The total actual cost and investment on a community-by-community basis will change as the project specifics are worked out and community-by-community details for the rights-of-way are finalized with local input from all communities.

In October 2010 the Project released preliminary estimates of the number of New Hampshire jobs that will be created during the development and construction phases. About one-quarter to one-third of the construction costs were estimated to be spent locally.

Using simple static economic multipliers for New Hampshire (supported by the federal Bureau of Economic Analysis), called RIMS II multipliers, a first order approximation of the economic impacts of the project during the development and construction phases was reported. The preliminary estimates reported in October 2010 found the project will positively impact in-state New Hampshire employment by an average of 1,100 to 1,300 jobs per year over the primary construction period 2013 to 2015, with peak employment impacts estimated at 1,370 to 1,670 jobs in 2013. The preliminary report noted: "It is expected that there will be extensive New Hampshire jobs related to clearing and site work, harvesting, construction and materials, including electrical, professional, and technical services." RIMS multipliers suggest that approximately half the jobs could be direct jobs and half could be indirect and induced; however, the multipliers do not provide detail by industry.

The purpose of this Update is to provide greater detail about the preliminary jobs estimates associated with the economic impacts to New Hampshire during the development and construction phases of the proposed project. As noted above, the REMI model is a sophisticated dynamic forecasting and policy analysis tool, compared to RIMS II multipliers which are static multipliers. Because REMI is a dynamic, interactive model, it allows for a more comprehensive analysis of how an investment such as the Northern Pass transmission project will impact the economy over time, by industry, and by region. The REMI model used here to estimate the job impacts from this project was a twenty-three sector, three-region, New Hampshire model. Local project expenditures were entered into the model by year, industry (e.g., technical and professional services, forestry, and construction) and region. The results provide industry- and region-specific employment estimates by year, unlike the results in the preliminary study which used static RIMS multipliers at the state level and were not broken down by industry or region. In New Hampshire, state government has used the REMI model to estimate the economic impacts of mill closings, as well as the economic impacts of the Regional Greenhouse Gas Initiative (RGGI) and Renewable Portfolio Standards (RPS).

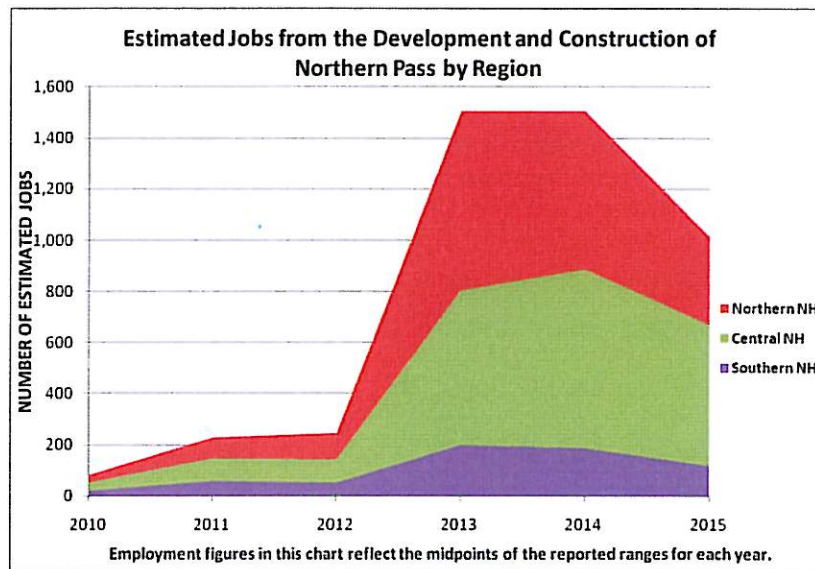
The job estimates in this Update were prepared based on estimated local expenditures in New Hampshire in the range of approximately \$200 million to \$250 million as inputs into the REMI model. This Update finds that an average of approximately 1,100 to 1,500 jobs will be created annually in New Hampshire over the three-year construction phase of the project, similar to the results of the preliminary study using the RIMS II multipliers. Additional jobs will be created during the pre-construction phase of the project as well. The lower-range estimates are based on local investment of around \$200 million, with higher-range job estimates resulting from investment of around \$250 million.



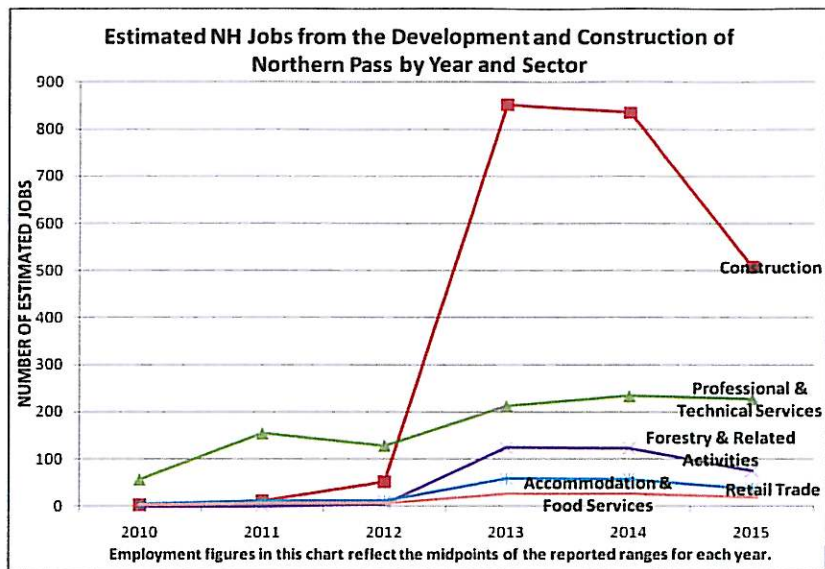
As noted, the REMI model used for this Update was a three-region New Hampshire model. The Northern NH region includes Carroll, Coos and Grafton counties; the Central NH region includes Belknap, Merrimack, Strafford and Sullivan counties; and the Southern NH region includes Cheshire, Hillsborough, and Rockingham counties. Project expenditures on materials and labor are expected to occur in each region in accordance with the proposed siting of the transmission line. For modeling purposes, pre-construction development costs are assumed to be equally distributed in each of the three regions. This Update finds that a substantial number of jobs will be created in the Northern NH and Central NH regions. The midpoint of the low- and high-case average annual number of jobs during project construction is approximately 555 in Northern NH and 620 in Central NH.

Estimated Job Creation by Region, 2013-2015

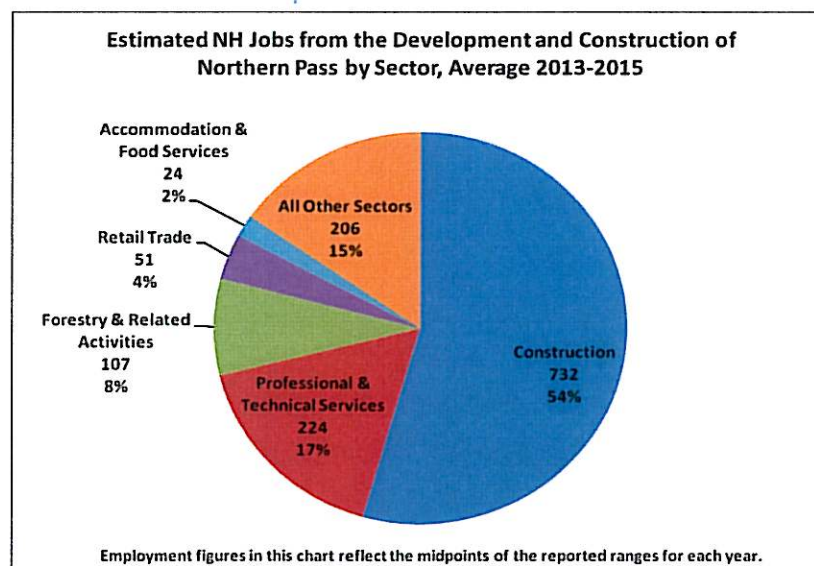
Region	2013	2014	2015	3-Year Annual Average	Midpoint of 3-Year Annual Average
Northern NH	620-785	550-690	305-385	490-620	555
Central NH	535-675	620-780	490-615	545-690	620
Southern NH	180-225	170-210	110-135	150-190	170
State of NH	1,330-1,680	1,330-1,680	900-1,135	1,190-1,500	1,345



This proposed \$1.1 billion project is expected to result in approximately \$200 million to \$250 million in local spending on labor and materials in New Hampshire. Consistent with the economic impact of large-scale energy infrastructure projects, Northern Pass is expected to create a significant number of New Hampshire construction jobs, professional and technical service jobs, and forestry jobs related to clearing and site work. Jobs will also be created in the retail trade and accommodation and food services industries.



There will be significant job opportunities for construction workers as well as employment opportunities in other industries, especially during the three-year construction phase of the project. The chart above shows the midpoint of each range in each of the six years, whereas the pie chart below shows the average annual number of jobs in each industry over the three-year construction period 2013 to 2015. During this period, construction jobs will peak in the range of 750 to 950; professional and technical service jobs will peak in the range of 200 to 260; and forestry jobs related to clearing and site work will peak in the range of 110 to 140. In addition, retail jobs will peak in the range of 50 to 60, and accommodation and food service jobs will peak in the range of 20 to 30.





The lists below provide additional detail on the types of jobs that the proposed project is expected to need in New Hampshire.

Project Construction Jobs:

Administrative Support
Building Construction (Interior/Exterior/Roofing)
Electricians – Wiring/Lighting/Power
Equipment Fueling
Fencing installation
Fiber Optic Splicing
Foundation Installation (Concrete)
Geotechnical Surveyors
Groundmen
Laborers
Land Surveyors
Landscaping and Restoration
Linemen
Mechanics and onsite equipment repair
Plumbers
Switchyard Steel Erection
Traffic Control (Temporary and Permanent Installations)
Tree Clearing and Logging
Wireman/Cable Splicers

Trucking and Material Delivery/Handling:

Concrete Gravel
Logging and Chipping Flatbed
Material Handlers

Heavy Equipment Operators:

Bulldozer Pile Driver
Crane Forklift
Drill Rig Front End Loader
Excavator Skidsteer
Grader Hoist



Other Services:

Testing and Commissioning Support (Switchyard Equipment)

Gravel/Aggregate Suppliers

Equipment Fuel Suppliers

Security Services

Security System Installation/Equipment Service

Snow Removal Services

Fire Protection System Installation/Equipment Service

Real Estate Professionals

HVAC System Installation/Equipment Service

Converter Equipment Warranty Services

Value Cooling System Installation – Welders/Pipefitters

Cement Suppliers

www.northernpass.us/jobs